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POWER-CONTROLLED RANDOM ACCESS

Abstract of the Disclosure

A novel power-controlled random-access method allows a mobile station to gain fast access to the base station. At the mobile station, a composite power control command is devised after an initial access attempt. The determination of the composite command uses an open-loop power-control symbol and a closed-loop power-control symbol, to decide the action of the mobile station upon transmission of its next random-access signal. In the preferred embodiment, the composite power control command can specify different levels of increase or decrease in transmission power, and the composite power control command can specify a back-off by the mobile station. This composite power-control mechanism can help resolve collision between mobile stations accessing the same random access sub-channel and therefore maintain a low-delay in the random-access process and a high-utilization on the access-channel resource.